

### Switchmode Full Plastic Ultra-fast Power Rectifiers

Designed for use in switching power supplies, inverters and as free wheeling diodes. These state-of-the-art devices have the following features:

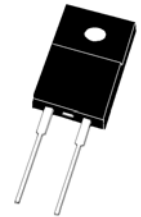
- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* High-Switching Speed 50 & 75 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory

\* In compliance with EU RoHs 2002/95/EC directives



**ULTRA FAST  
RECTIFIERS**

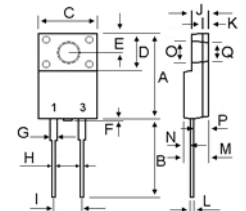
**8 AMPERES  
300-600 VOLTS**



**ITO-220AC**

### MAXIMUM RATINGS

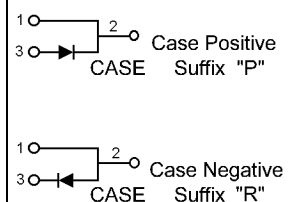
Characteristic	Symbol	URAF08				Unit
		30	40	50	60	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	300	400	500	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	210	280	350	420	V
Average Rectifier Forward Current Per Leg $T_C=125^\circ\text{C}$	$I_{F(AV)}$	8.0				A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz, $T_C=125^\circ\text{C}$ )	$I_{FM}$	16				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	$I_{FSM}$	125				A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150				$^\circ\text{C}$



DIM	MILLIMETERS	
	MIN	MAX
A	15.05	15.15
B	13.35	13.45
C	10.00	10.10
D	6.55	6.65
E	2.65	2.75
F		1.00
G	1.15	1.25
H	0.55	0.65
I	4.80	5.20
J	3.00	3.20
K	1.10	1.20
L	0.55	0.65
M	4.40	4.60
N	1.15	1.25
O	3.35	3.45
P	2.65	2.75
Q	3.15	3.25

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	URAF08				Unit
		30	40	50	60	
Maximum Instantaneous Forward Voltage ( $I_F=8$ Amp $T_C=25^\circ\text{C}$ ) ( $I_F=8$ Amp $T_C=125^\circ\text{C}$ )	$V_F$	1.30 1.12		1.50 1.34		V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C=25^\circ\text{C}$ ) ( Rated DC Voltage, $T_C=125^\circ\text{C}$ )	$I_R$		10 500			$\mu\text{A}$
Reverse Recovery Time ( $I_F=0.5$ A, $I_R=1.0$ , $I_{rr}=0.25$ A )	$T_{rr}$		50			ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f=1$ MHz)	$C_P$	85		70		pF



# URAF0830 Thru URAF0860

FIG-1 TYPICAL FORWARD CHARACTERISTICS

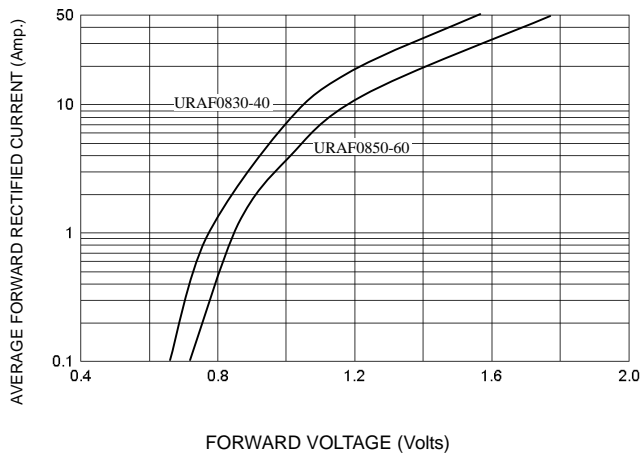


FIG-3 FORWARD CURRENT DERATING CURVE

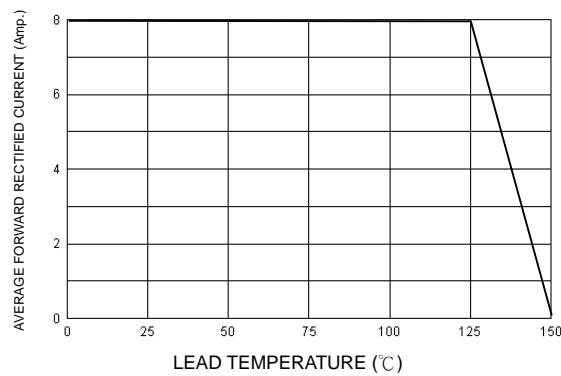


FIG-2 TYPICAL REVERSE CHARACTERISTICS

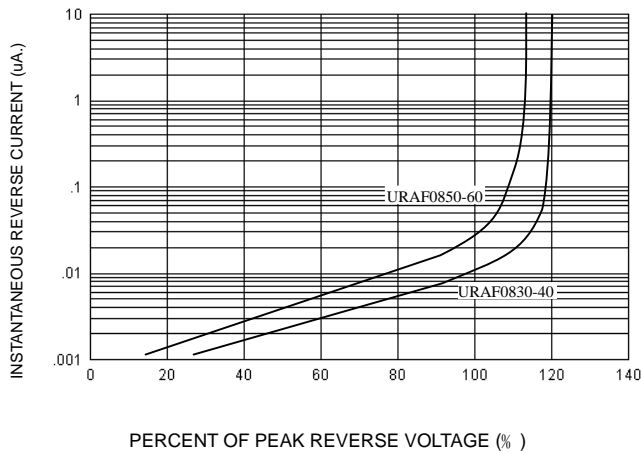


FIG-4 TYPICAL JUNCTION CAPACITANCE

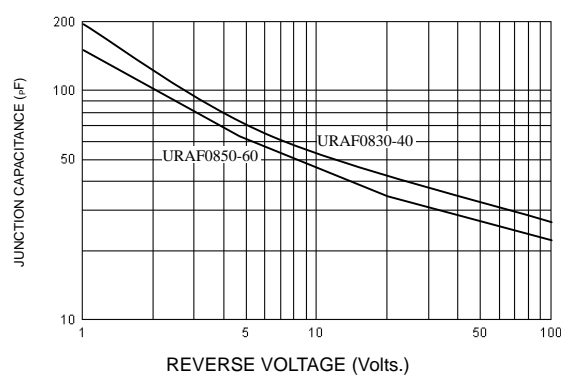
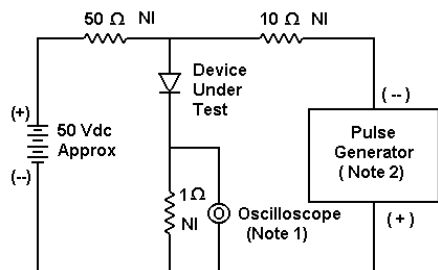
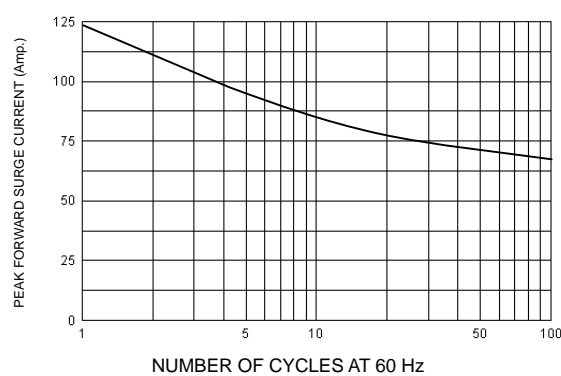
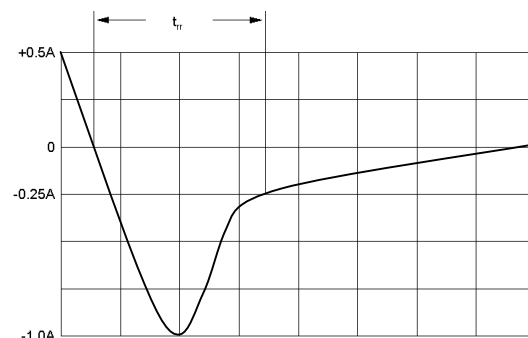


FIG-5 PEAK FORWARD SURGE CURRENT



- Notes:
1. Rise Time = 7 ns max. Input Impedance = 1 M Ω , 22 pF
  2. Rise Time = 10 ns max. Input Impedance = 50 Ω



Set time base for 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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